

Clean Versions of all Pending Claims

1. (Twice Amended) A substantially pure nucleic acid encoding a lineage-37 (LIN-37) polypeptide that is free of the genes which, in the naturally-occurring genome of the organism, flank the gene, said polypeptide having about 50% or greater amino acid sequence identity to SEQ ID NO: 1, wherein said polypeptide has the ability to alter cell proliferation.

4. The nucleic acid of claim 1, wherein said nucleic acid is cDNA.

7. (Twice Amended) A substantially pure DNA encoding the amino acid sequence of SEQ ID NO: 1 that is free of the genes which, in the naturally-occurring genome of the organism, flank the gene, wherein said DNA encodes a polypeptide having the ability to alter cell proliferation.

10. (Twice amended) A substantially pure synMuv nucleic acid comprising nucleic acid having about 50% or greater nucleotide sequence identity to the DNA sequence of SEQ ID NO: 2, wherein said nucleic acid encodes a polypeptide having the ability to alter cell proliferation.

11. The nucleic acid of claim 1, wherein said DNA is operably linked to regulatory sequences for expression of said polypeptide and wherein said regulatory sequences comprise a promoter.

12. The nucleic acid of claim 11, wherein said promoter is a constitutive promoter.

13. The nucleic acid of claim 11, wherein said promoter is inducible by one or more external agents.

14. The nucleic acid of claim 11, wherein said promoter is cell-type specific.

15. A vector comprising the nucleic acid of claim 1, said vector being capable of directing expression of the peptide encoded by said DNA in a vector-containing cell.

16. (Twice Amended) A cell which contains a substantially pure nucleic acid encoding a lineage-37 (LIN-37) polypeptide that is free of the genes which, in the naturally-occurring genome of the organism, flank the gene, said polypeptide having about 50% or greater amino acid sequence identity to SEQ ID NO: 1, wherein said polypeptide has the ability to alter cell proliferation.

17. (Amended) The cell of claim 16, said cell being present in a patient having a condition involving altered cell proliferation.

18. (Twice Amended) A transgenic cell which contains a substantially pure nucleic acid encoding a lineage-37 (LIN-37) polypeptide having about 50% or greater amino acid sequence identity to SEQ ID NO: 1, wherein said polypeptide has the ability to alter cell proliferation.

25. (Twice Amended) A substantially pure *lineage-37 (lin-37)* nucleic acid having about 50% or greater nucleotide sequence identity to SEQ ID NO: 2 isolated according to the method comprising:

- (a) providing a cell sample;
- (b) introducing by transformation into said cell sample a candidate *lin-37* nucleic acid;
- (c) expressing said candidate *lin-37* nucleic acid within said cell sample; and
- (d) determining whether said cell sample exhibits an altered cell proliferation response, whereby an altered level of cell proliferation identifies a *lin-37* nucleic acid.

34. (New) A substantially pure, naturally-occurring nucleic acid encoding a lineage-37 (LIN-37) polypeptide that is free of the genes which, in the naturally-

occurring genome of the organism, flank the gene, said polypeptide having 50% or greater amino acid sequence identity to the amino acid sequence of SEQ ID NO: 1, wherein said polypeptide has the ability to alter cell proliferation.

35. (New) The nucleic acid of claim 1, wherein said nucleic acid encodes a LIN-37 polypeptide that has 85% or greater amino acid sequence identity to the amino acid sequence of SEQ ID NO:1.

36. (New) The nucleic acid of claim 1, wherein said nucleic acid encodes a LIN-37 polypeptide that has 95% or greater amino acid sequence identity to the amino acid sequence of SEQ ID NO:1.

37. (New) The nucleic acid of claim 1, wherein said nucleic acid encodes a LIN-37 polypeptide that has the ability to decrease cell proliferation.

38. (New) The nucleic acid of claim 37, wherein said nucleic acid encodes a LIN-37 polypeptide that has the ability to decrease cell proliferation by 50%.

39. (New) The nucleic acid of claim 37, wherein said nucleic acid encodes a LIN-37 polypeptide that has the ability to decrease cell proliferation by one-fold.

40. (New) A substantially pure, naturally-occurring synMuv nucleic acid comprising nucleic acid having 50% or greater nucleotide sequence identity to the nucleotide sequence of SEQ ID NO: 2, wherein said nucleic acid encodes a polypeptide having the ability to alter cell proliferation.

41. (New) The synMuv nucleic acid of claim 10, wherein said synMuv nucleic acid comprises a nucleic acid sequence that has 85% or greater nucleotide sequence identity to the nucleotide sequence of SEQ ID NO:2.

42. (New) The synMuv nucleic acid of claim 10, wherein said synMuv nucleic acid comprises a nucleic acid sequence that has 95% or greater nucleotide sequence identity to the nucleotide sequence of SEQ ID NO:2.

43. (New) The synMuv nucleic acid of claim 10, wherein said synMuv nucleic acid encodes polypeptide that has the ability to decrease cell proliferation.

44. (New) The synMuv nucleic acid of claim 43, wherein said synMuv nucleic acid encodes a polypeptide that has the ability to decrease cell proliferation by 50%.

45. (New) The synMuv nucleic acid of claim 43, wherein said synMuv nucleic acid encodes a polypeptide that has the ability to decrease cell proliferation by one-fold.

46. (New) A cell which contains a substantially pure naturally occurring nucleic acid encoding a lineage-37 (LIN-37) polypeptide that is free of the genes which, in the naturally-occurring genome of the organism, flank the gene, said polypeptide having 50% or greater amino acid sequence identity to SEQ ID NO: 1, wherein said polypeptide has the ability to alter cell proliferation.

47. (New) The cell of claim 16, wherein said nucleic acid encodes a LIN-37 polypeptide that has 85% or greater amino acid sequence identity to the amino acid sequence of SEQ ID NO:1.

48. (New) The cell of claim 16, wherein said nucleic acid encodes a LIN-37 polypeptide that has 95% or greater amino acid sequence identity to the amino acid sequence of SEQ ID NO:1.

49. (New) The cell of claim 16, wherein said nucleic acid encodes a LIN-37 polypeptide that has the ability to decrease cell proliferation.

50. (New) The cell of claim 49, wherein said nucleic acid encodes a LIN-37 polypeptide that has the ability to decrease cell proliferation by 50%.

51. (New) The cell of claim 49, wherein said nucleic acid encodes a LIN-37 polypeptide that has the ability to decrease cell proliferation by one-fold.

52. (New) A transgenic cell which contains a substantially pure naturally-occurring nucleic acid encoding a lineage-37 (LIN-37) polypeptide having 50% or greater amino acid sequence identity to SEQ ID NO: 1, wherein said polypeptide has the ability to alter cell proliferation.

53. (New) The transgenic cell of claim 18, wherein said nucleic acid encodes a LIN-37 polypeptide that has 85% or greater amino acid sequence identity to the amino acid sequence of SEQ ID NO:1.

54. (New) The transgenic cell of claim 18, wherein said nucleic acid encodes a LIN-37 polypeptide that has 95% or greater amino acid sequence identity to the amino acid sequence of SEQ ID NO:1.

55. (New) The transgenic cell of claim 18, wherein said nucleic acid encodes a LIN-37 polypeptide that has the ability to decrease cell proliferation.

56. (New) The transgenic cell of claim 55, wherein said nucleic acid encodes a LIN-37 polypeptide that has the ability to decrease cell proliferation by 50%.

57. (New) The transgenic cell of claim 55, wherein said nucleic acid encodes a LIN-37 polypeptide that has the ability to decrease cell proliferation by one-fold.

58. (New) A substantially pure, naturally-occurring *lineage-37* (*lin-37*) nucleic acid having about 50% or greater nucleotide sequence identity to SEQ ID NO: 2 isolated according to the method comprising:

- (a) providing a cell sample;
- (b) introducing by transformation into said cell sample a candidate *lin-37* nucleic acid;
- (c) expressing said candidate *lin-37* nucleic acid within said cell sample; and
- (d) determining whether said cell sample exhibits an altered cell proliferation response, whereby an altered level of cell proliferation identifies a *lin-37* nucleic acid.

59. (New) The *lin-37* nucleic acid of claim 25, wherein said *lin-37* nucleic acid has 85% or greater nucleotide sequence identity to the nucleotide sequence of SEQ ID NO: 2.

60. (New) The *lin-37* nucleic acid of claim 25, wherein said *lin-37* nucleic acid has 95% or greater nucleotide sequence identity to the nucleotide sequence of SEQ ID NO: 2.

61. (New) A substantially pure, naturally-occurring *lineage-37* (*lin-37*) nucleic acid having about 50% or greater nucleotide sequence identity to SEQ ID NO: 2 isolated according to the method comprising:

- (a) providing a cell sample;
- (b) introducing by transformation into said cell sample a candidate *lin-37* nucleic acid;
- (c) expressing said candidate *lin-37* nucleic acid within said cell sample; and
- (d) determining whether said cell sample exhibits an altered cell proliferation response, whereby a decreased level of cell proliferation identifies a *lin-37* nucleic acid.

62. (New) The *lin-37* nucleic acid of claim 25, wherein said *lin-37* nucleic acid has the ability to decrease cell proliferation.

63. (New) The *lin-37* nucleic acid of claim 62, wherein said *lin-37* nucleic acid has the ability to decrease cell proliferation by 50%.

64. (New) The *lin-37* nucleic acid of claim 62, wherein said *lin-37* nucleic acid has the ability to decrease cell proliferation by one fold.